

including completion rate, least connections, packet rate, hops, round trip times, quality of service and dynamic ratio.

10. (Currently amended) The method of Claim 4, further comprising selecting one of the plurality of load balancing determinations as a primary load balancing determination, the primary load balancing determination being used to select the server ip address when a time stamp is not expired, the time stamp being associated with metric information used by the primary load balancing determination.

11. (Currently amended) The method of Claim 10, further comprising selecting one of the plurality of load balancing determinations as an alternate load balancing determination, the alternate load balancing determination being employed to select the server ip address when the time stamp associated with the metric information used by the primary load balancing determination is expired, another time stamp being associated with metric information employed by the alternate load balancing determination.

12. (Currently amended) The method of Claim 11, further comprising selecting one of the plurality of load balancing determinations as a fallback load balancing determination, the fallback load balancing determination being employed to select the server ip address when the time stamp associated with the metric information used by the primary load balancing determination and the other time stamp associated with the metric information employed by the alternate load balancing determination are expired.

13. (Previously Presented) The method of Claim 7, further comprising a plurality of EDNSs that are separately disposed at a plurality of geographically distributed data centers, each data center including at least one of a server array controller, host machine and EDNS.

14. (Currently amended) The method of Claim 13, wherein at least one of the plurality of EDNSs is a secondary EDNS, the secondary EDNS storing a copy of the metric information collected by the primary EDNS, the secondary EDNS employing the copy of metric information to select a particular ip address server at that will optimally balance the load for accessing resources.

u 15. (Currently amended) The method of Claim 13, wherein at least one of the plurality of EDNSs is a secondary EDNS, the secondary EDNS collecting metric information that is employed to select a particular ip address server that will optimally balance the load for accessing resources.

16. (Original) The method of Claim 4, further comprising a server array controller for managing access to at least one of the plurality of virtual servers, the server array controller being in communication with the EDNS.

17. (Original) The method of Claim 16, wherein the server array controller is a BIG/IP server array controller.

18. (Currently amended) The method of Claim 1, wherein the selected ~~server~~ ip address is associated with a stand-alone server.

19. (Currently amended) The method of Claim 4, further comprising an agent program that collects the metric information and communicates the collected metric information to the EDNS when the EDNS is not resolving the ip address ~~for the resources associated with the domain name request.~~

20. (Original) The method of Claim 1, wherein the network comprises a wide area network, Internet and intranet.

21. (Currently amended) The method of Claim 4, further comprising a wide ip that maps the domain name to at least one ip address server, the wide ip being employed when the primary DNS is separate from the EDNS.

controller and the local DNS, the number of times a specified path is chosen, the number of times that the EDNS has received data about the specified path and the number of hops between routers for a transaction between the local DNS and the selected server.

29. (Original) The method of Claim 23, wherein the statistics for the local DNS include a measure of how often a particular local DNS is used and the number of times that the EDNS received a resolution request from the local DNS.

30. (Original) The method of Claim 22, wherein the statistics for the wide ip include weighting values for the servers managed by a particular server array controller, weighting values for the servers managed by another Host machine, the number of successful domain name resolutions, the number of unsuccessful name resolutions, the load balancing modes used for the pool of servers managed by each server array controller, the load balancing modes used for the pool of servers managed by each Host machine, the number of servers managed by each server array controller that are used to load balance a specified wide ip, and the number of servers managed by each host machine that are used to load balance the specified wide ip.

31. (Original) The method of Claim 4, wherein the EDNS employs an iQuery protocol to communicate the metric information from the agent program to the EDNS.

32. (Original) The method of Claim 1, wherein the EDNS is a 3DNS server.

✓ 33. (Cancelled)

34. (Original) The method of Claim 24, wherein the generated statistics include a quality of service value that is related to the sum of separate portions of collected metric information, including packet rate, round trip time, hops, virtual server capacity, completion rate and topology.

35. (Original) The method of Claim 34, wherein each portion of the metric information is separately multiplied by a selectable value that determines the weight of that portion of the metric information in generating the quality of service value.

36. (Original) The method of Claim 34, wherein the generated statistics include a dynamic ratio value for each virtual server managed by a server array controller, the dynamic ratio value being related to the quality of service value and having selectable values for determining the weight of each portion of the metric information that is employed to generate the dynamic ratio value.

37. (Currently amended) A system for balancing a load on a plurality of virtual servers that provide access to resources associated with a domain name, comprising:

- (a) a memory for storing logical instructions; and
- (b) a processor for executing the logical instructions stored in the memory, the execution of the logical instructions causing functions to be performed, including:
 - (i) receiving a request for access to resources associated with the domain name from a domain name system (DNS);
 - (ii) determining the load out of band for each of a plurality of virtual servers that provide access to resources associated with the domain name and selecting one of Internet Protocol (ip) address associated with the plurality of virtual servers to provide the access, the selection of the serverip address being based on a determination for optimally balancing the load on the plurality of servers; and
 - (iii) ~~based on the determination for optimally balancing the load if~~ the domain name's associated resource is further associated with the plurality of

virtual servers, resolving an the selected one Internet protocol (ip) address of the selected server in response to the request from the DNS, wherein so that the subsequent accessing of resources associated with the domain name at the resolved ip address of the selected server will cause enables the load to be optimally balanced on the plurality of servers on a network.

✓ 38. (Cancelled)

39. (Original) A computer readable medium having computer executable instructions for performing the method recited in Claims 1, 4, 19 or 23.

40. (Currently amended) An apparatus for balancing a load on a plurality of virtual servers that provide access to a resource associated with a domain name, comprising:

- (a) a memory for storing logical instructions;
- (b) a transceiver for communicating over a network;
- (c) a processor for executing the logical instructions stored in the memory, the execution of the logical instructions causing actions to be performed, including:

(i) receiving a request for access to the resource associated with the domain name from a domain name system (DNS),

(ii) determining the load out of band for each of a the plurality of virtual servers that provide access to resources associated with the domain name and selecting one of Internet Protocol (ip) address associated with the plurality of virtual servers to provide the access, the selection of the server ip address being based on a determination for optimally balancing the load on the plurality of virtual servers, wherein at least one of the plurality of virtual servers is disposed in a geographic area

45. (Previously Presented) The apparatus of Claim 40, wherein the performed actions further comprise enabling an agent to communicate metric information regarding at least one of a server, virtual server, and a server array controller to at least one of another server array controller, a primary EDNS, and a secondary EDNS.

c) 46. (Previously Presented) The apparatus of Claim 40, wherein the performed actions further comprise enabling a UDP based protocol for communicating metric information by at least one of an agent, server array controller, primary EDNS, and Secondary EDNS.

47. (Previously Presented) The apparatus of Claim 40, wherein the performed actions further comprise enabling an EDNS disposed at one geographic location to make the load balancing determination by selecting a virtual server that is disposed at another geographic location.

48. (Currently amended) The apparatus of Claim 40, wherein the performed actions further comprise enabling an EDNS disposed at one geographic location to employ another EDNS disposed at another geographic location to make the load balancing determination for the plurality of virtual servers ~~selected server~~.

49. (Currently amended) The apparatus of Claim 40, wherein the performed actions further comprise at least one of a plurality of load balancing determinations, including selecting ~~the~~ a virtual server based on hop counts between the selected virtual server and a local DNS for the client, selecting the virtual server based on round trip times between the selected virtual server and the local DNS for the client, and selecting the virtual server based on a topology of the network.

50. (Currently Amended) An apparatus for balancing a load on a plurality of virtual servers that provide access to a resource associated with a domain name, comprising:

(a) a memory for storing logical instructions;

(b) a transceiver for communicating over a network;

(c) a processor for executing the logical instructions stored in the memory, the execution of the logical instructions causing actions to be performed, including:

C) (i) receiving a request from a client for access to a resource associated with the domain name from a domain name system (DNS);

(ii) collecting metric information out of band related to communication between at least one local DNS that is associated with the client and at least one of the plurality of virtual servers, wherein the metric information is employable for determining the load on at least one of the plurality of virtual servers;

(iii) determining the load for each of a plurality of virtual servers that provide access to the resource associated with the domain name and selecting one of the plurality of virtual servers to provide the access, the selection of the virtual server being based on a determination for balancing the load on the plurality of virtual servers; and

(iv) if the domain name's associated resource is further associated with the plurality of virtual servers, resolving an Internet protocol (IP) address of the selected virtual server in response to the request from the DNS, wherein a subsequent accessing of the resource associated with the domain name at the resolved IP address of the selected virtual server by the client enables ~~will cause~~ the load to be balanced on the plurality of virtual servers.

51. (Previously Presented) The apparatus of Claim 50, wherein at least a part of the collected metric information is employable in the determination of the selected virtual server for balancing the load on the plurality of virtual servers.

52. (Previously Presented) The apparatus of Claim 50, wherein the collected metric information is employed for balancing the load on the plurality of virtual servers, and wherein at least one virtual server is disposed in a geographic location that is separate from another geographic location where at least another virtual server is disposed.

53. (Previously Presented) The apparatus of Claim 50, wherein the metric information further comprises at least one of a hop count, round trip time, and packet completion rate.

C1 54. (Previously Presented) The apparatus of Claim 50, wherein the performed actions further comprise enabling an agent disposed on a node server to communicate metric information to at least one of a virtual server, server array controller, and an EDNS.

55. (Currently Amended) A system for balancing a load on a plurality of virtual servers that provide access to a resource associated with a domain name, comprising;

(a) a server array controller that balances the load on a plurality of node servers, wherein the server array controller generates each virtual server based on at least a portion of the capacity of at least one of the plurality of node servers; and

(b) an EDNS that provides for balancing the load on the plurality of virtual servers, the EDNS performs actions, including:

(i) collecting metric information out of band related to the plurality of virtual servers, wherein the metric information is employable for determining the load on at least one of the plurality of virtual servers;

(ii) determining the load for each of the plurality of virtual servers that provide access to the resource associated with the domain name and selecting

one of the plurality of virtual servers to provide the access, the selection of the virtual server being based on a determination for balancing the load on the plurality of virtual servers and including the resolved Internet protocol (IP) address of the selected virtual server; and

01 (iii) in response to a request from a client for access to the resource associated with the domain name that is further associated with the plurality of virtual servers, enabling the resolved IP address of the selected virtual server to be provided to the client, wherein a subsequent and separate accessing of the resource associated with the domain name at the resolved IP address of the selected virtual server by the client causes the load to be balanced on the plurality of virtual servers.

56. (Previously Presented) The system of Claim 55, wherein at least one virtual server is disposed in a geographic location that is separate from another geographic location where at least another virtual server is disposed.

57. (Previously Presented) The system of Claim 55, further comprising enabling the EDNS disposed at one geographic location to make the load balancing determination by selecting a virtual server that is disposed at another geographic location.

58. (Previously Presented) The system of Claim 55, further comprising the EDNS disposed at one geographic location to employ another EDNS disposed at another geographic location to make the load balancing determination for the selected server.

59. (Currently Amended) An agent for balancing a load on a plurality of virtual servers that provide access to a resource associated with a domain name, wherein the agent performs actions, comprising:

(a) collecting metric information out of band related to at least one of the plurality of virtual servers, wherein the metric information is employable for determining the load on at least one of the plurality of virtual servers;

(b) providing the metric information to an EDNS,

C1 (c) enabling the EDNS to employ the metric information to determine the load for each of the plurality of virtual servers that provide access to the resource associated with the domain name and select one of the plurality of virtual servers to provide the access, the selection of the virtual server being based on a determination for balancing the load on the plurality of virtual servers and including the resolved Internet protocol (IP) address of the selected virtual server; and

(d) in response to a request from a client to access the resource associated with the domain that is further associated with the plurality of virtual servers, enabling the EDNS to provide the resolved IP address of the selected virtual server, and wherein a subsequent and separate accessing of the resource associated with the domain name at the resolved IP address of the selected virtual server by the client causes the load to be balanced on the plurality of virtual servers.

60. (Previously Presented) An apparatus for balancing a load on a plurality of virtual servers that provide access to a resource associated with a domain name, comprising:

(a) means for receiving a request from a client for access to a resource associated with the domain name;

(b) means for collecting metric information out of band related to communication between at least one local DNS that is associated with the client and at least one of the plurality of virtual servers, wherein the metric information is employable for determining the load on at least one of the plurality of virtual servers;

C/ (c) means for determining the load for each of a plurality of virtual servers that provide access to the resource associated with the domain name and selecting one of the plurality of virtual servers to provide the access, the selection of the virtual server being based on a determination for balancing the load on the plurality of virtual servers; and

(d) means for resolving an Internet protocol (IP) address of the selected virtual server, wherein a subsequent accessing of the resource associated with the domain name at the resolved IP address of the selected virtual server by the client will cause the load to be balanced on the plurality of virtual servers.
